

IN THE CLAIMS:

The following is a complete listing of the claims in this application, reflects all changes currently being made to the claims, and replaces all earlier versions and all earlier listings of the claims:

1. (Currently Amended) An image pick-up apparatus comprising a wavelength converter for converting an incident radiation to a light having a wavelength detectable by a photoelectric conversion element on ~~a sensor~~ an insulating substrate on which plural photoelectric conversion elements and plural switching elements are deposited,

wherein the wavelength converter is deposited on a flattening layer, and

wherein the plural photoelectric conversion elements, the plural switching elements, and the flattening layer are situated between the ~~sensor~~ insulating substrate and wavelength converter.

2. (Currently Amended) An image pick-up apparatus according to Claim 1, wherein the flattening layer is obtained by flattening a protective layer provided on the ~~sensor~~ insulating substrate.

3. (Currently Amended) An image pick-up apparatus according to Claim 1, wherein the flattening layer is provided on a protective layer on the ~~sensor~~ insulating substrate.

4. (Original) An image pick-up apparatus according to Claim 1, wherein a second flattening layer is provided on the wavelength converter.

5. (Original) An image pick-up apparatus according to Claim 4, wherein the second flattening layer covers the end face of the wavelength converter.

6. (Original) An image pick-up apparatus according to Claim 1, wherein the surface of the wavelength converter is flattened.

7. (Original) An image pick-up apparatus according to Claim 4, wherein a light reflection film is provided on the second flattening layer.

8. (Original) An image pick-up apparatus according to Claim 6, wherein a light reflection film is provided on the flattened wavelength converter.

9. (Original) An image pick-up apparatus according to Claim 1, wherein the wavelength converter comprises a scintillator.

10. (Original) An image pick-up apparatus according to Claim 9, wherein the scintillator comprises a columnar crystal.

11. (Original) An image pick-up apparatus according to Claim 9, wherein the scintillator comprises a CsI crystal.

12. (Original) An image pick-up apparatus according to Claim 7, wherein the light reflection film is made of an aluminum film.
13. (Original) An image pick-up apparatus according to Claim 8, wherein the light reflection film is made of an aluminum film.
14. (Original) An image pick-up apparatus according to Claim 8, having plural **sensor insulating** substrates.
15. (Currently Amended) An image pick-up apparatus comprising plural **sensor insulating** substrates on which plural pairs of a photoelectric conversion element and a switching element are deposited,
wherein the plural **sensor insulating** substrates comprise flattening layers on which a wavelength converter is deposited, and
wherein the photoelectric conversion element, the switching element, and the flattening layer are situated between the **sensor insulating** substrate and the wavelength converter.
16. (Original) An image pick-up apparatus according to Claim 15, wherein a second flattening layer is provided on the wavelength converter.
17. (Original) An image pick-up apparatus according to Claim 16, wherein the second flattening layer covers the end face of the wavelength converter.

18. (Original) An image pick-up apparatus according to Claim 16, wherein a light reflection film is provided on the second flattening layer.

19. (Original) An image pick-up apparatus according to Claim 15, wherein the wavelength converter comprises a scintillator.

20. (Original) An image pick-up apparatus according to Claim 19, wherein the scintillator layer comprises a columnar crystal.

21. (Original) An image pick-up apparatus according to Claim 20, wherein the scintillator layer comprises a CsI crystal.

22. (Original) An image pick-up apparatus according to Claim 18, wherein the light reflection film is made of an aluminum film.

23. (Currently Amended) An image pick-up system comprising an image pick-up apparatus provided with a wavelength converter for converting an incident radiation to a light having a wavelength detectable by a photoelectric conversion element on ~~a sensor~~ an insulating substrate on which plural photoelectric conversion elements and plural switching elements are deposited,

wherein the wavelength converter is deposited on a flattening layer, and

wherein the plural photoelectric conversion elements, the plural switching elements, and the flattening layer are situated between the ~~sensor~~ insulating substrate and wavelength converter, said system comprising:

a signal processing means for processing the signal from the image pick-up apparatus; and

a display means for displaying the signal from the signal processing means.

24. (Original) An image pick-up system according to Claim 23, further comprising a telecommunication means for transferring the signal from the signal processing means.

25. (Original) An image pick-up apparatus system to Claim 23, further comprising a recording means for recording the signal from the signal processing means.

26. (Original) An image pick-up system according to Claim 23, further comprising a storage means for storing the signal from the signal processing means.

27. (Currently Amended) An image pick-up system comprising:
an image pick-up apparatus comprising plural ~~sensor~~ insulating substrates on which plural photoelectric conversion elements and plural switching elements are deposited, a flattening layer being deposited on the plural ~~sensor~~ insulating substrates and a wavelength converter being deposited on the flattening layer, with the photoelectric

conversion elements, the switching elements, and flattening layer being situated between the ~~sensor~~ insulating substrates and the wavelength converter, said system comprising:

a signal processing means for processing the signal from the image pick-up apparatus; and

a display means for displaying the signal from the signal processing means.

28. (Original) An image pick-up system according to Claim 27, further comprising a recording means for recording the signal from the signal processing means.

29. (Original) An image pick-up system according to Claim 27, further comprising a telecommunication means for transferring the signal from the signal processing means.

30. (Original) An image pick-up system according to Claim 27, further comprising a storage means for storing the signal from the signal processing means.

31.-51. (Canceled)

52. (Currently Amended) An image pick-up apparatus comprising a wavelength converter for converting an incident radiation to a light having a wavelength detectable by a photoelectric conversion element on a ~~sensor~~ an insulating substrate on which plural photoelectric conversion elements and switching elements are deposited,

wherein the wavelength converter is deposited on a flattening layer,

wherein the plural photoelectric conversion elements, the plural switching elements, and the flattening layer are situated between the ~~sensor~~ insulating substrate and wavelength converter, and

wherein the photoelectric conversion elements comprise non-single crystalline semiconductor material.

53. (Previously Presented) The image pick-up apparatus according to Claim 52, wherein the photoelectric conversion elements comprise an amorphous silicon film.